

VIII.3.3-LOOKUP3 3 VARIABLE TABLE LOOKUP OPERATION

Identifier: LOOKUP3

Operation Number: 53

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Parameter Array: The FORTRAN identifier used for the parameter array for this Operation is P. The contents of the P array are:

<u>Position</u>	<u>Contents</u>
1	Operation version number (integer)
2-19	General name or title or description
20	Number of P array positions used (integer)
21-22	First independent argument time series identifier (x)
23	First independent argument data type code
24	First independent argument data time interval
25-26	Second independent argument time series identifier (z)
27	Second independent argument data type code
28	Second independent argument data time interval
29-30	Dependent argument time series identifier (y)
31	Dependent argument data type code
32	Dependent argument time interval
33	Units of 'Z-segment' array: 'ENGL' = English 'METR' = metric (default)
34	Number of elements in the 'Z-segment' array

The following contents define the relationships between the 2 independent arguments and the dependent argument. This sequence of Z, X1, Y1, X2, Y2, X3 and Y3 values define the 'Z-segment'. A minimum of 2 points of first and second independent arguments are required for each dependent argument.

<u>Position</u>	<u>Contents</u>
34+	Z - second independent argument
35+	X1 - first independent argument, first value
36+	Y1 - dependent argument, first value
37+	X2 - first independent argument, second value
38+	Y2 - dependent argument, second value
39+	X3 - first independent argument, third value
40+	Y3 - dependent argument, third value

The total number of positions required in the P array is 33 plus the number of points in the 'Z-segment' array.

Subroutine Names and Functions:

Subroutine Function

PIN53	Input values, makes checks and stores values in P array
TAB53	Make entries into the Operations Table
PRP53	Print information stored in the P array
PUC53	Punch input cards
EX53	Execute the Operation

Subroutines PIN53, PRP53 and PUC53 have the standard argument lists as described in Section VIII.4.3.

SUBROUTINE EX53 (P,D1X,D2Z,SY)

Function

This is the execution control routine for Operation LOOKUP3.

Argument List

<u>Argument</u>	<u>Input/ Output</u>	<u>Type</u>	<u>Dimension</u>	<u>Description</u>
P	Input	R*4	Variable	Parameters, options and time series information
D1X	Input	R*4	Variable	First independent variable time series values
D2Z	Input	R*4	Variable	Second independent variable time series values
SY	Output	R*4	Variable	Resultant dependent variable time series values

SUBROUTINE TLU53 (A1,A2, TABLE ,R)

Function

Given the first independent argument (A1), second independent argument (A2) and a table of family of curves (array TABLE), this routine interpolates for a dependent result (R).

Argument List

<u>Argument</u>	<u>Input / Output</u>	<u>Type</u>	<u>Dimension</u>	<u>Description</u>
A1	Input	R*4	1	First independent value
A2	Input	R*4	1	Second independent value
T	Input	R*4	Variable	3-variable relationship ('Z-segment' array)
R	Output	R*4	1	Dependent result

SUBROUTINE TAB53 (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,LWORK,IDL)

Identification: This is the Operations Table entry routine for Operation LOOKUP3.

Argument List: The arguments for this subroutine are similar to the arguments for the Operations Table entry subroutines for other Operations. A description of the arguments is contained in Section VIII.4.2-TAB.

Operations Table Array: The contents of the TO array are:

<u>Position</u>	<u>Contents</u>
1	The number of this Operation
2	Location of next Operation in T array
3	Location of parameters in P array
4	Location of carryover in C array
5	Location of first independent argument time series in D array
6	Location of second independent argument time series in D array
7	Location of dependent argument time series in D array